



TIVO® WHOLE HOME INSTALLATION



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2013

TiVo Whole Home Installation

TiVo offers the world's most advanced entertainment platform featuring industry-leading recording capacity, the most tuners, cutting-edge control apps, and unparalleled access to all the leading web entertainment.

This install guide will help you through the process of designing, installing, configuring and adding accessories as you build a whole home entertainment network for your customers.

One: What You Need

This section shows you how to design a whole home network using TiVo products and what infrastructure is necessary for the best customer experience.

Two: How To Install and Configure

This section guides you through the process of installing TiVo Premiere and our most popular accessories.

Three: Optional Accessories

This section outlines how to extend the customer experience both inside and out of the home with easy-to-configure accessories.

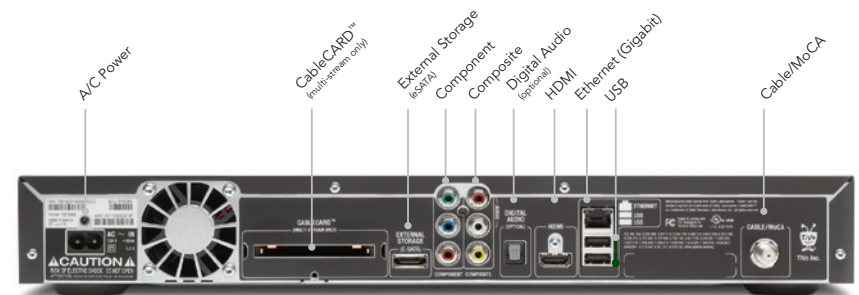
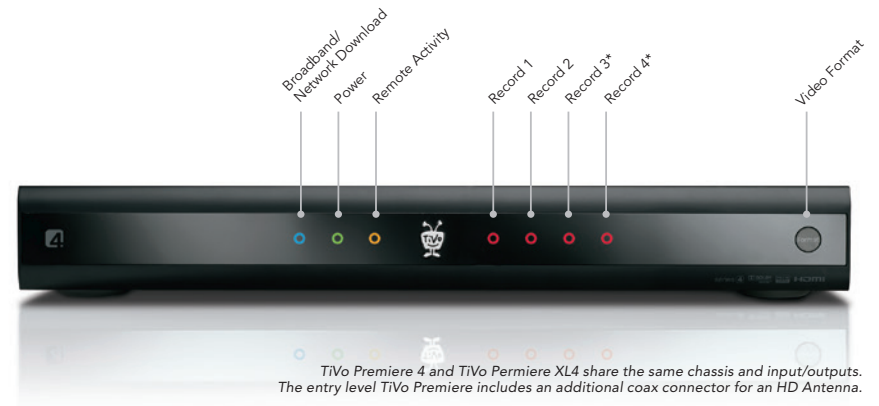
One: What You Need

Hardware

A standard TiVo whole home setup requires at least one TiVo DVR, a video source (cable or antenna, depending on the model), and a fast Internet connection.

Connections:

The diagram below illustrates TiVo Premiere (Series 4) connections that will be referenced later in this guide.



*Recording indicators for tuners number 3 & 4 are only available on 4 tuner models.

Whole Home Installation:

TiVo DVRs require one of the following networking connections and a digital signal via a CableCARD (or HD antenna).



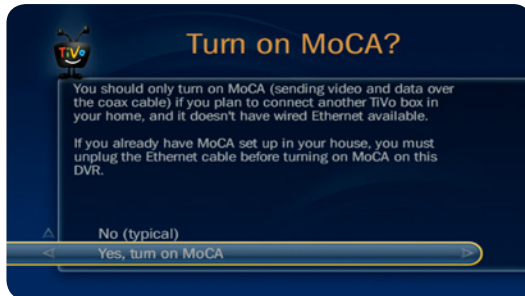
Ethernet:

An RJ-45 Ethernet connection at all Whole Home-enabled product locations.

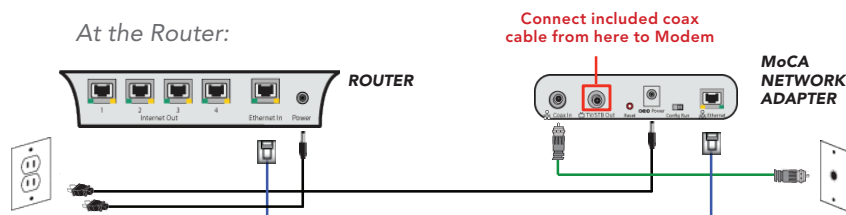
MoCA enabled Coax:

MoCA injects Internet connectivity into a home's coax network allowing each DVR to operate without an Ethernet or Wireless connection.

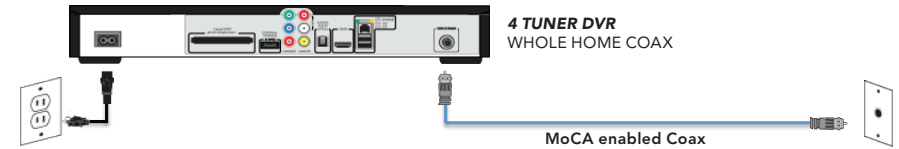
Coax based networking require the feature to be enabled on the four tuner DVR. To enable MoCA start at Tivo Central > Settings > Network & Phone > Change network settings > Enable MoCA. See screen shot below.



1. **Whole Home "Homerun"** configuration (typical) requires a coaxial connection at all Whole Home-enabled product locations and access to the open port on the network router. This configuration is used when the router/switch is in a different location than the DVR. This configuration also requires the use of an additional adapter.

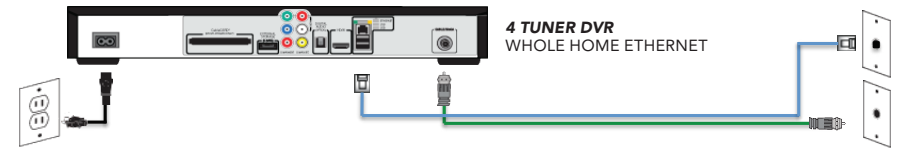


At the DVR:



2. **Whole Home "Daisychain"** configuration requires an Ethernet connection at the location of a four-tuner DVR and Ethernet and/or Coaxial at all other Whole Home-enabled locations. This configuration is used when the router/switch is the same location as the four tuner DVR.

At the DVR:



CableCARD options:

To decrypt cable channels with a third-party box, cable companies require the use of a CableCARD. Two variations of this card exist, a Single-stream CableCARD (S-CARD) and a Multi-stream CableCARD (M-CARD). CableCARD compatibility varies by TiVo model; see chart below.

Model	Cable Card Type	Cable Card Slots
TiVo Premiere	M-CARD	1
TiVo HD	2 S-CARD(s) or 1 M-CARD(s)	2
TiVo Series 3 HD	2 M-CARD(s) or 2 S-CARD(s)	2

OBTAINING A CABLECARD:

M-CARDS are available in one of two ways:

Pick up:

Customers can pick up an M-CARD from a local cable office. Not all offices stock CableCARDS, so installers should call ahead to verify inventory. The pick up option is available from any cable provider that supports self-installation.

Cable company installation:

Customers may opt to have a CableCARD delivered as a part of their cable installation order in some regions. This often happens when someone has a new line of service installed. Visit: <http://www.fcc.gov/guides/cablecard-know-your-rights>

TiVoPro Tip:

Some cable companies also allow the account holders to authorize a custom installer to pick up a CableCARD on their behalf. Check with your local cable company for details.

Two: How To Install

Begin TiVo DVR installation by connecting the power cord, and connecting the box to the Internet via a wired or wireless connection. Next, establish the cable source (or HD antenna: only for TiVo Premiere 2-tuner DVRs) and configure the device through the on-screen Guided Setup.

Networking Options

TiVo DVRs require an active network connection as a part of every standard installation. TiVo DVRs have a number of networking options available to accommodate various installation situations. Networking options vary based on the size of the installation.

Ethernet:

This connection type is the fastest and most-reliable connection available in homes.

Model	Ethernet Ports Speed
TiVo Premiere	10/100/1000
TiVo HD	10/100

Wireless:

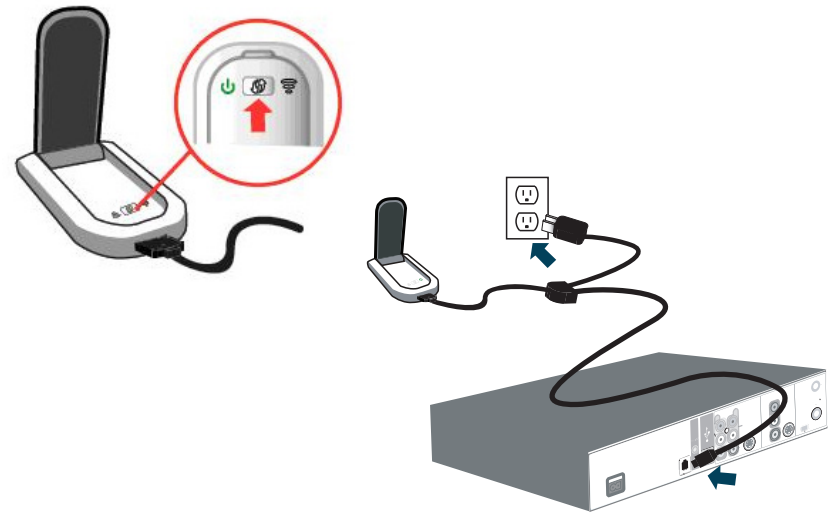
Acceptable for rooms without access to a hard-wired connection.

TiVo manufactures a wireless N adapter for connecting to existing wireless networks. This accessory offers two connection methods. Before beginning installation, make sure the adapter is set to **client mode**. See diagram.

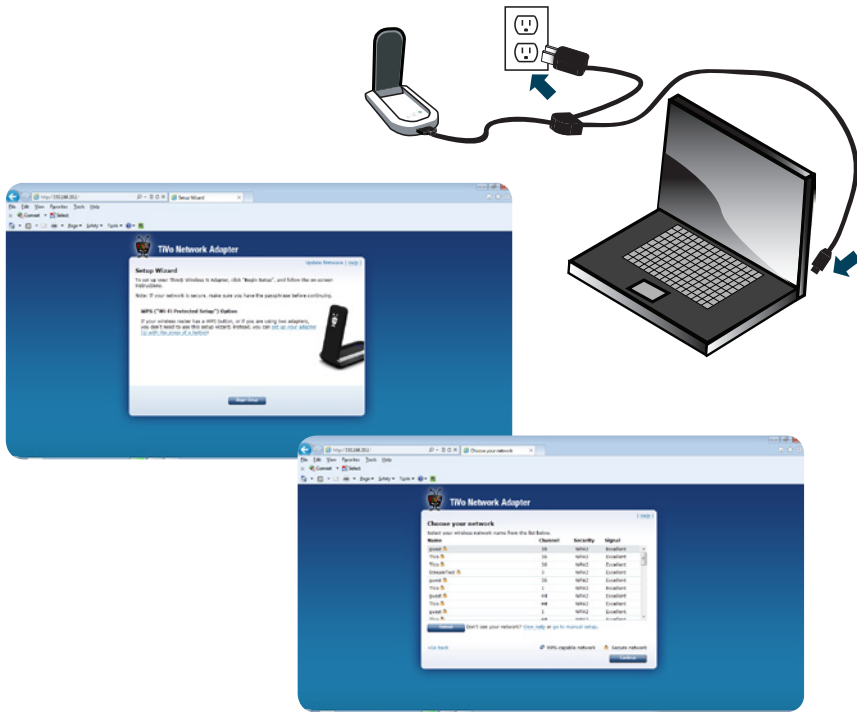


Support for wireless a/b/g/n standards

- 1. Wi-Fi Protected Setup (WPS):** If the router supports this option, connect the wireless adapter by pressing the WPS button and then pressing the corresponding button on the wireless router. When the device stops blinking, the connection is complete. Check the router's instruction guide to confirm the availability of this option.



2. Manual setup: If the router doesn't support WPS connections, a laptop is needed to log into the web interface for the wireless adapter. Before beginning this installation method, you will need the SSID and passphrase for the wireless network.



Accessing the web interface:

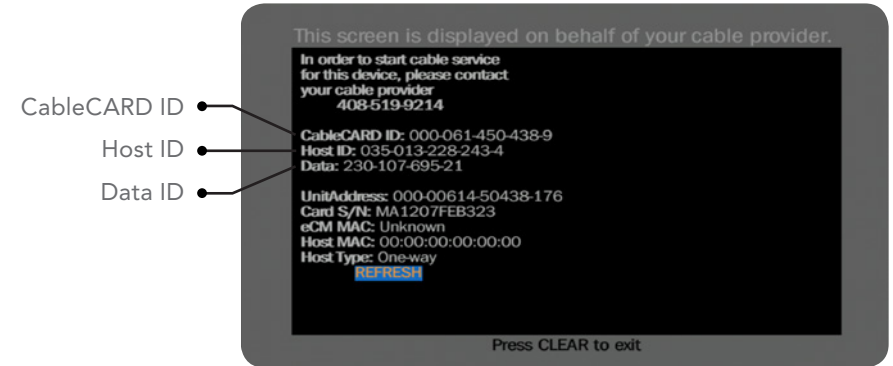
- Disable the wireless adapter on the PC being used for setup. See individual manufacturer's instructions, if needed.
- Connect the wireless adapter cables to the appropriate ports.
- Open the computer's browser and enter the adapter's default IP address (192.168.10.1) in the URL bar.
- Select the network to join and enter the network passphrase.
- Once the connection is completed, remove the adapter from the computer and install in the appropriate ports on the DVR.
- Enable the wireless adapter PC used for setup.

ACTIVATING THE CABLECARD:

To activate an M-CARD correctly, the coaxial cable must be connected to the back of the DVR before choosing to activate the CableCARD.

Cable-assisted installations:

Cable company installers need to access the CableCARD pairing screen inside of the installer options screen when installing a TiVo DVR. The menu displaying the CableCARD ID, Host ID, and Data ID is set to automatically display on screen when a CableCARD is inserted.



Setting & Messages > Settings > Remote, CableCARD, & Devices > CableCARD Decoder > CableCARD options > CableCARD Menu > CableCARD

If for any reason this screen does not appear, the guide below shows how to navigate to the CableCARD menu to properly activate the CableCARD.

Self-installation:

Cable companies offer activation options for installations performed without a cable-company installer present. The list below provides activation information for common cable service providers. If you do not see a self-installation phone number for the chosen cable service, please check the cable provider information kit for help with self-installation. Depending on the provider, the CableCARD ID and Host ID from the TiVo DVR may be required. Follow the guide for navigating to the CableCARD installer's menu found in the cable-assisted installation section of this guide.

Comcast (877) 405-2298

RCN (888) 891-7770

Comcast Automated (800) 671-9094
www.comcast.com/activate

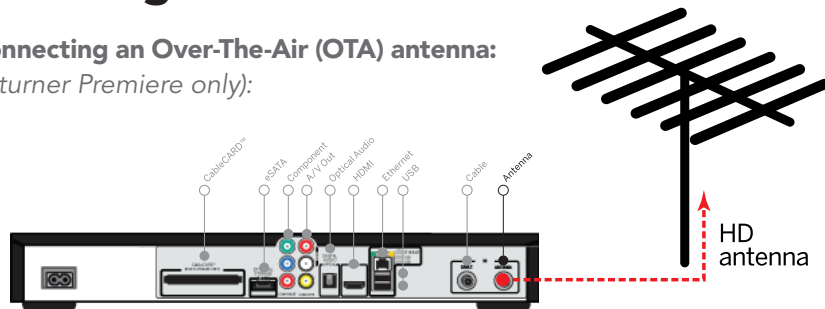
Time Warner (866) 606-5889

Cox (888) 556-1193

Verizon (888) 897-7499
www.verizon.com/fiostv/selfinstall

Installing an antenna:

Connecting an Over-The-Air (OTA) antenna:
(2-tuner Premiere only):



TiVoPro Tip:

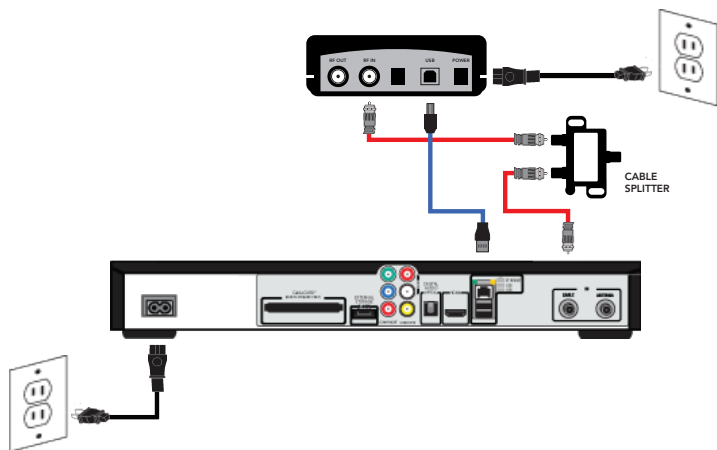
When picking an antenna as a primary video source, the amplitude and design of an antenna as well as the distance and direction of your OTA signals ultimately determines channel selection. To determine the above information, visit antennaweb.org.

Installing a tuning adapter (optional):

A tuning adapter is a small set-top box that provides two-way capabilities, so a TiVo DVR can transmit channel requests to the cable head-end.

(Does not support cable VOD.) In some areas, installing a tuning adapter is required in order to receive broadcasting from a local cable company.

The tuning adapter must be compliant with the CableCARD(s) issued for a customer's account. Please see the diagram below for wiring configuration.



TiVoPro Tip:

The branding on the M-CARD will more than likely match the branding on the tuning adapter, confirming their compatibility in most cases.

Complete Guided Setup:

Guided Setup will automatically run the first time you power up the TiVo Premiere series box. The Guided Setup allows configuration of networking and connectivity and automatically updates the operating system software and program guide information. You can repeat Guided setup by going to: TiVo Central (TiVo button) > Messages & Settings > Help > Restart or Reset System > Repeat Guided Setup.

1. Begin Guided Setup: Review service terms, activate service (if necessary), select your country and video output, and enter your ZIP or postal code.

NOTE: Boxes purchased from the TiVo.com store always come pre-activated. If the box was purchased at a retail store or distributor, you can activate it online at www.tivo.com/activate.

2. Choose TV programming source: Choose cable only if you are using basic cable or CableCARDS. Choose cable & antenna if you are using basic cable or CableCARDS and a digital antenna. Choose antenna only if you are only using a digital antenna as your programming source. **IMPORTANT:** Only the 2-tuner Premiere supports antenna. You will not see all these options on Premiere 4 and XL4.

3. When prompted, install the CableCARD. If you already have a CableCARD, install it, then call the cable provider to activate it, and then test the channels. If you are waiting to pick up a CableCARD from the cable company office, or you are not going to use CableCARDS, follow the prompts to continue without CableCARDS. Once you receive the CableCARD, insert it in the back and follow the onscreen prompts.

4. Choose the network settings that will connect to the TiVo service.

5. Get setup information, choose a cable provider
(if using Cable or Cable & Antenna), and set up channels.

6. Get initial program information: TiVo service will connect to TiVo's servers and download program information, including program titles, times, channels, descriptions. This may also be the time when the TiVo box updates to the latest software, which may take about 30 minutes.

7. When prompted, press the TiVo button to complete Guided Setup.
The box has one day of Guide data, but will soon make an additional connection to the TiVo Service to get the full 14 days of Guide data. This completes the DVR setup. Next, you can proceed to configure web entertainment services (Netflix, Hulu Plus, Pandora, etc.) using on-screen menus and consider adding accessories to further enhance the entertainment experience.

Three: Accessories

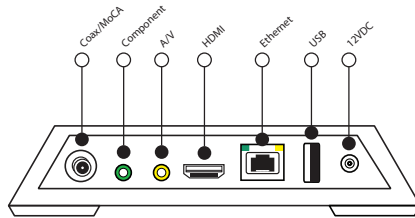
TiVo offers several accessories to extend and enhance the entertainment experience both inside, and outside, the home. Each of these accessories are easy to install and offer cutting-edge features and high value to the customer.

TiVo® Mini:

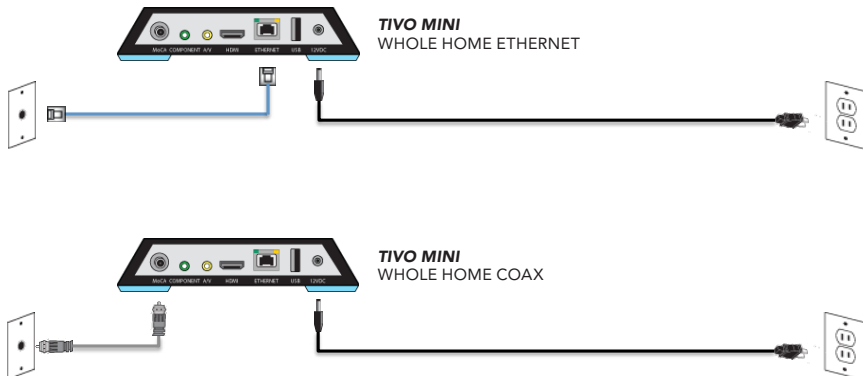
TiVo Mini is an IP-based solution and requires an active network connection for every standard installation. TiVo Mini allows you to watch live TV or recorded shows streamed from another TiVo DVR. It also lets you access content from Hulu Plus, YouTube™, Pandora®, Spotify® and more. The TiVo Mini requires at least one 4-tuner TiVo box to be on the network. Before installation, the device must have been activated on the same account as the accompanying DVR.

Connections:

Select one of the following network connections based on the networking configuration.



Make the following connections on the back of the TiVo Mini based on the networking configuration.



TiVo® Stream:

TiVo Stream is a streaming accessory available for use with iOS 5.1 devices* or later and Premiere DVRs. TiVo Stream allows you to stream recorded shows from a TiVo Premiere series DVR simultaneously to multiple mobile devices, allows you to watch a show on a mobile device as it's being recorded and wirelessly transfer shows from your TiVo to a mobile device. Before installing, a TiVo Stream must have been activated on the same account as the accompanying DVRs. The TiVo Stream has its own TiVo Service Number on the bottom of the unit.

Networking options:

TiVo Stream can only be connected to a home network using an Ethernet cable. This connection can be anywhere on the network, but TiVo recommends placing the unit in close proximity to the wireless router (see diagram below).



TiVoPro Tip:

When using a MoCA enabled Whole Home network as an IP solution, Stream can plug directly into the Ethernet port on a four-tuner DVR.

TiVo app:

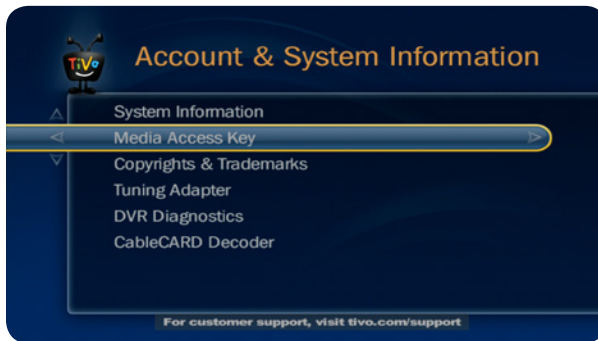
A free app is available for iOS* and Android devices that provides second-screen interaction for Premiere DVRs.



* iPad®, iPhone® and iPod touch®

Software installation:

After connecting TiVo Stream to a home network, the TiVo app setup must be completed on compatible portable devices. To finish this portion of the installation, the following information is required: network SSID and passphrase from the wireless network, and the Media Access Key (MAK) from the TiVo DVR. You can locate the MAK on the DVR by navigating to TiVo Central > Settings & Messages > Account & System Info > Media Access Key. The MAK is located on the account information screen (see screenshot below).



Launch App:

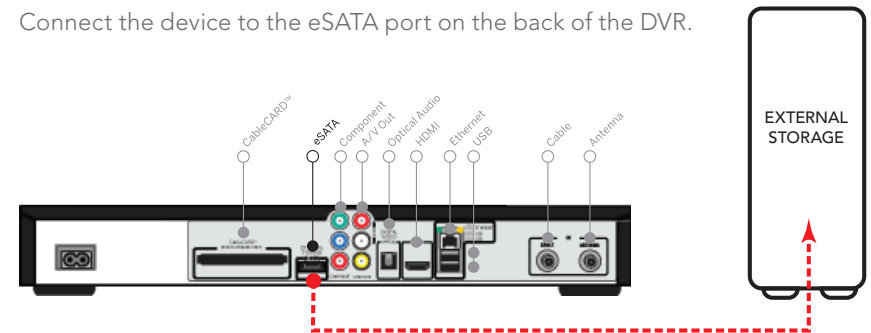
Once the portable device is on the same network as the DVR, launch the TiVo app, enter the MAK if this was not already done, select the Setting tab in the top left-hand corner, then select Setup TiVo Stream (see screenshot below).



Advanced storage solutions: DVR Expander:

The expander is designed to expand the storage capacity of a single DVR location. TiVo DVRs are compatible with eSATA hard drives specifically designed to merge with the DVR onboard drive to increase capacity. Verification of compatibility can be obtained from manufacturer.

Connect the device to the eSATA port on the back of the DVR.



Disconnecting the eSATA drive will result in a loss of all recording data once it has been connected. Failure of one drive will result in the failure of both drives in all cases.

Networked Attached Storage (NAS):

Provides a central location for content:

Step 1. Enable home network apps on the DVR.



Step 2. Install the NAS according the manufacturer's directions

Home Automation and Control

The TiVo Premiere box was engineered with the ability to easily integrate with popular control systems via IP or IR with a transmitter. By default, the feature that allows network devices to control the TiVo unit via IP is turned off to ensure network security.

Compatible Control Systems:

Important Default Setting

TiVo DVRs can be controlled by networked devices, such as Crestron home control systems. Beginning with version 9.4 of the TiVo software, this feature is turned OFF by default to ensure home network security. To enable this feature and turn it ON, do the following:

1. Go to TiVo Central > Messages & Settings > Settings > Remote, CableCARD & Devices > Network Remote Control
2. Choose "Enabled"
3. Press "Select"

These partner companies have control modules readily available. If your preferred control system does not have a module available, you can program one using the "TCP Remote Protocol" as a guide. You should already be familiar with the mechanics of opening and using TCP connections before using the protocol.



Glossary

CableCARD – is a specialized version of a PCMCIA card designed specifically to decode scrambled digital cable signals. TiVo Premiere DVRs use a Multi-stream CableCARD (M-Card) which is inserted into a slot in the back of the DVR. CableCARDS must be activated by a cable provider.

Digital Tuning Adapter (DTA): A Tuning Adapter is a small set top box that gives your CableCARD-equipped TiVo box the ability to request switched digital video (SDV) channels. Like CableCARDS, Tuning Adapters are part of the digital cable system, so they must be issued by the cable provider. Tuning Adapters are installed in the cable line between the TiVo box and the cable wall outlet. An additional USB connection is used by the TiVo box to send channel tuning requests to the Tuning Adapter, which transmits the requests back to the cable system.

Media Access Key (MAK) – is the numerical passcode assigned to any content associated with the TiVo account. All devices on the same account share the same MAK to verify permission to access content. You may be prompted to enter this number when setting up additional TiVo devices and accessories.

MoCA (Multimedia over Coax Alliance) – Delivers a high-speed network connection through existing coax cable. Some TiVo products feature a built-in MoCA bridge (XL4), others require an Ethernet-coax bridge.

Multi-Service-Operator (MSO) – refers to large entities offering a multitude of services including cable, internet, phone and security. When used in reference to TiVo products it implies a synonym for cable company.

Network Attached Storage (NAS) – is an detached storage solution with can be accessed via a network or FTP site. This storage is in turn shared with all other devices authorized on the network. In reference to TiVo, NAS can provide additional storage for all networked units.

Over-the-top (OTT) – Content designated by the provider as above and beyond traditional linear channels provided by the cable company.

Season Pass® recording – TiVo feature that keeps track of a show that is part of a series. Set one up, and the TiVo service will make sure to record the show every week, even if the day or time changes. You can tell the TiVo box how many episodes to keep and if it should record reruns.

TiVo App – the free all-purpose mobile application for iOS, Android, and Kindle HD enables TV guide data, remote DVR management, and touch screen control for compatible TiVo DVRs.

TiVo Service Number (TSN) – refers to the unique identifier associated with every box manufactured by TiVo Inc. This number identifies aspects of the box to TiVo Customer Service to help assist in troubleshooting among other activities.

Trickplay™ Bar - shown as green linear bar on the bottom of the screen, the Trickplay Bar represents the continuous video stream a TiVo DVR is processing and allows for manipulation of video content with operations for pause, rewind, and resume.

Video on Demand (VOD) – refers to services that grant access to content upon request. Transactional VOD refers to services like Amazon Instant Video and cable VOD that require users to pay for each individual piece of content. Subscription-based VOD, like Netflix and Hulu Plus, offer a flat monthly fee for unlimited access to a content library.

Whole Home Enabled –refers to TiVo products with built-in MoCA capability and the ability to integrate into a home network via Ethernet or coaxial cable in order to share content.

Appendix: The TiVo Remote:

The TiVo Premiere remote control has a number of alternate button functions that are useful for enhancing the DVR experience. New users should become familiar with the remote as part of the Premiere DVR installation process, especially if this is their first TiVo DVR experience.

- 1 The TiVo button takes you to the *TiVo® Central* screen, the starting point for all your TiVo features and settings.
- 2 If programmed, TV PWR turns your TV or A/V receiver on/off.
- 3 Use the Thumbs Up and Thumbs Down buttons to rate shows for TiVo Suggestions.
- 4 Pause freezes a show. Press it again to resume playing.
- 5 Back (rewind) rewinds a program. Press it up to three times for three speeds.
- 6 Slow plays a show in slow motion.
- 7 Instant Replay repeats the last 8 seconds of the show. Press and hold to jump to the beginning of a show.
- 8 Within the HD menus, the A, B, C, D buttons sort and filter views. Look for the onscreen tips.
- 9 Clear removes the display of the channel banner or program guide and deletes titles from *My Shows* or the *To Do List*.
- 10 Live TV/Swap takes you to live TV. If you're watching live TV, use it to swap tuners.
- 11 Info shows the channel banner while watching live TV; press it again to make it disappear.
- 12 Guide takes you to the program guide, where you can find shows to watch or record. Press it again to clear the guide.
- 13 Use the Arrow buttons to navigate the TiVo menus and the program guide.
- 14 Use Select to choose menu options or shows to record.
- 15 Press Record to start recording the show you're watching, or to set up a recording for a show selected in the program guide.
- 16 Play starts playing a show from the *My Shows* list.
- 17 Forward (fast-forward) fast-forwards through a program. Press it up to three times for three speeds.
- 18 Advance moves forward in 30-second increments; press and hold to jump to the end of the show.
- 19 Enter/Last returns you to the last channel tuned to in live TV.

TiVoPro Tip:

The "Live TV" button swaps between tuners, enabling viewers to time shift (pause/rewind) multiple channels at the same time.

